

Electric Utility and Utility-Terrain Vehicles



The Federal Highway Administration estimates fuel usage of all-terrain vehicles or ATVs in 2011 topped 315 million gallons, or roughly 52% of non-highway recreational fuel use that year.

Most ATVs, which the driver straddles like a motorcycle, are used for recreation. Some models with more traditional seating are used for work, and are called utility-terrain vehicles, or UTVs. Replacing gasoline-powered UTVs with electric versions has the potential to significantly cut fuel consumption and emissions.

Field tests conducted by EPRI indicate a potential energy cost savings of about 60% with an all-electric UTV.

Utility vehicles transport people and goods indoors and outdoors off city streets. Also called burden or personnel carriers, these vehicles are common indoors in large industrial manufacturing plants, warehouses, and airports, and outdoors on private corporate, resort, and university campuses, among other locations. Many electric models, each designed to perform specific tasks, are available. Some resemble modified golf carts with extra rows of seats to carry people, while others are designed for indoor industrial use, with load capacities ranging from 600–6,500 lbs. System voltages range from 24 VDC and VAC to 80 VAC.

Some utility vehicles designed for outdoor, rugged, all-terrain use, such as on farms or military bases, at beaches, or in large parks, are called utility-terrain vehicles, or UTVs. Like their utility vehicle counterparts, their specifications vary widely. One all-electric model has a 30 hp, 48 VAC motor, all-wheel drive, and a 1,500-lb. towing capacity. Another has a 6 hp, 48 VDC motor, and a 500-lb. cargo box capacity.

In 2012–13, EPRI demonstrated the use of two all-electric UTVs in a military base application. One vehicle, driven more than 240 miles over an eight-month test period consumed roughly 223 kWh energy, for an average of 1.08 kWh per mile. A detailed energy cost analysis found that the potential for energy cost savings is around 60% when compared to conventional gasoline UTVs. The peak charge power was 1.2 kW.



Although most utility vehicles and UTVs are not designed to travel on public roads, vehicles that meet the requirements of a separate class of four-wheeled vehicles called low-speed vehicles or LSVs are legal to drive on city streets of 35 mph or lower. These vehicles must be outfitted with designated safety equipment and their top speed limited to 25 mph. Some utility vehicles qualify as LSVs. Neighborhood electric vehicles are a type of LSV.

Electric Utility and UTV Manufacturers

Brand Name	Supplier	Contact Information
GEM	Polaris	www.polaris.com
Gator	John Deere	www.deere.com
Minute Miser	Cushman	www.cushman.com
Ranger	Polaris	www.polaris.com
Taylor-Dunn	Taylor-Dunn	www.taylor-dunn.com



Additional EPRI Resources

Available for download at www.epri.com/ET.

Electric Utility Terrain Vehicle Demonstration in a Military Base in Florida, 2013, ID# 3002001559

Two all-electric UTVs were instrumented and deployed at Eglin Air Force Base for six months to evaluate their field performance, energy usage, and cost savings potential compared to conventional gasoline UTVs. Field test results indicate a potential energy cost savings of about 60% with the all-electric version.

Commercial and Industrial Guide to Electric Transportation, 2015, ID# 3002004898

This 16-page color brochure introduces the electric vehicles and equipment that are currently in use or being demonstrated, and the opportunities for further electrification in commercial and industrial applications.

Contact Information

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